

SEQUENCE LISTING

<110> Vega MASIGNANI

<120> ADP-RIBOSYLATING TOXIN FROM LISTERIA MONOCYTOGENES

<130> PP020009.0003

<140> PCT/IB2004/001440

<141> 2004-04-08

<150> GB0308198.1

<151> 2003-04-09

<160> 29

<170> SeqWin99, version 1.02

<210> 1

<211> 604

<212> PRT

<213> Listeria monocytogenes

<400> 1

Met Lys Glu Val Asn Tyr Arg Glu Asp Asp Trp Arg Glu Ala Lys Ser
1 5 10 15

Ala Leu Ala Pro Phe Ala Ala Ala Asn Trp Val Gly Gly Leu Phe Asn
20 25 30

Asn Leu Glu Lys Val Ser Lys Asn Met Glu Glu Ala Glu Glu Asp Val
35 40 45

Gln Glu Leu Asp Ser Asp His Ala Ile Ser Phe Gln His Thr Asn Tyr
50 55 60

Arg Gly Lys Tyr Ser Ala Ile Glu Asp Asp Leu Met Val Leu Tyr Lys
65 70 75 80

Phe Ser Cys His Ala Gly Glu Lys Met Glu Thr Leu Val Asp Gln Pro
85 90 95

Phe Tyr Glu Lys Leu Asp Ala Phe Val Asp Gly Met Gln Asp Leu Ser
100 105 110

Ile Ser Thr Tyr Ser Thr Thr Asn Arg Ile Gly Ala Lys Ser Lys Gln
115 120 125

Thr Tyr Thr Thr Thr Ser Gly Gly Ser Gln Val Ile Glu Ser Ile Lys
130 135 140

Glu Gly Ala Thr Ile Glu Asp Leu Met Asn Gly Asp Asn Phe Tyr Ala
145 150 155 160

Asn Gln Met Gln Leu Gln Tyr Arg Asp Trp Gln Arg Ala Asn Pro Asp
165 170 175

Gln Asp Val Ser Lys Lys Asp Phe Gln Met Gly Met Leu His Ser Arg
180 185 190

Ala Phe Glu Tyr Lys Ser Ile Lys Asp Glu Gln Gln Glu Lys Glu Phe
195 200 205

Trp	Val	Asn	Ile	Val	Ala	Thr	Val	Val	Ile	Val	Gly	Val	Ser	Ile	Phe	210	215	220
Cys	Pro	Pro	Ala	Gly	Leu	Ala	Leu	Ala	Val	Gly	Tyr	Gly	Ser	Leu	Glu	225	230	235
Ala	Gly	Ser	Ala	Ile	Ser	Gly	Lys	Asp	Trp	Val	Ser	Gly	Arg	Glu	Leu	245	250	255
Ser	Thr	Glu	Glu	Arg	Ala	Leu	Arg	Gly	Gly	Leu	Ala	Leu	Leu	Asp	Ile	260	265	270
Val	Pro	Gly	Val	Lys	Ala	Leu	Ser	Thr	Gly	Ala	Lys	Ala	Ala	Ser	Ala	275	280	285
Gly	Ser	Lys	Leu	Val	Arg	Val	Gly	Asp	Asn	Val	Leu	Ala	Gly	Ser	Lys	290	295	300
Asn	Val	Gly	Lys	Gly	Thr	Ile	Asp	Asn	Gly	Ile	Gln	Ala	Gly	Lys	Gln	305	310	315
Ala	Met	Asp	Leu	Arg	Leu	Ala	Asn	Ala	Lys	Lys	Val	Ser	Glu	Ala	Val	325	330	335
Gln	Lys	Lys	Leu	Thr	Lys	Asp	Leu	Asp	Asp	Ile	Gly	Thr	Met	Ala	Lys	340	345	350
Thr	Ile	Gln	Asn	Lys	Thr	Lys	Glu	Thr	Phe	Thr	Leu	Pro	Pro	Arg	Glu	355	360	365
Gln	Leu	Ala	Phe	Ala	Arg	Gly	Gly	Ser	Ile	Pro	Glu	Gln	Ser	Ala	Thr	370	375	380
Gly	Ala	Ala	Ala	Ile	Ala	Ala	Lys	Lys	Lys	Leu	Lys	Asp	Ile	Met	Gln	385	390	395
Asn	Met	Asp	Asn	Leu	Asn	Val	Lys	Gly	Gly	Gly	Lys	Asp	Asp	Ile	Ile	405	410	415
Glu	Gln	Asn	Lys	Ser	Leu	Lys	Phe	Thr	Ser	Leu	Glu	Glu	Ser	Glu	Lys	420	425	430
Trp	Gly	Ile	Asp	Gly	Phe	Ser	Val	Trp	Arg	Asn	Ser	Leu	Ser	Ser	Arg	435	440	445
Glu	Ile	Gln	Ala	Ile	Arg	Asp	Tyr	Thr	Asp	Ile	Trp	His	Tyr	Gly	Asn	450	455	460
Met	Asn	Gly	Tyr	Leu	Arg	Gly	Ser	Val	Glu	Lys	Leu	Ala	Pro	Asp	Asn	465	470	475
Ala	Glu	Arg	Ile	Lys	Asn	Leu	Ser	Ser	Ala	Leu	Glu	Lys	Ala	Glu	Leu	485	490	495
Pro	Asp	Asn	Ile	Ile	Leu	Tyr	Arg	Gly	Thr	Ser	Ser	Glu	Ile	Leu	Asp	500	505	510
Asn	Phe	Leu	Asp	Leu	Lys	Asn	Leu	Asn	Tyr	Gln	Asn	Leu	Val	Gly	Lys	515	520	525
Thr	Ile	Glu	Glu	Lys	Gly	Phe	Met	Ser	Thr	Thr	Thr	Ile	Ser	Asn	Gln	530	535	540

Thr Phe Ser Gly Asn Val Thr Met Lys Ile Asn Ala Pro Lys Gly Ser
545 550 555 560

Lys Gly Ala Tyr Leu Ala His Phe Ser Glu Thr Pro Glu Glu Ala Glu
565 570 575

Val Leu Phe Asn Ile Gly Gln Lys Met Leu Ile Lys Glu Val Thr Glu
580 585 590

Leu Asn Gly Lys Ile Glu Ile Ile Val Asp Leu Leu
595 600

<210> 2
<211> 1815
<212> DNA
<213> *Listeria monocytogenes*

<400> 2
atgaaagaag tcaactaccg agaagacgac tggcgtgaag ccaaaagtgc cctcgtccca 60
tttgccgcag cgaattgggt aggcggttta ttcaataatt tagaaaaagt atcgaaaaat 120
atggaagaag cggaagaaga tgtccaagag ttggactcag accacgcgat ttcgtttcaa 180
cacaccaact atcgcgggaa gtacagcgct atcgaagacg atttgatggt attgtataag 240
tttagttgtc atgcagggga aaagatggaa accctggtag accaaccgtt ctatgagaag 300
ttagacgcgt ttgtggatgg catgcaagat ttgagtattt cgacgtattc taccaccaac 360
cggattgggtg cgaagtcgaa acaaacctat acaactacat ctggcgggtt gcaagtcatc 420
gagtccatca aagaaggtgc gacgatcgaa gatttgatga atggcgataa cttctacgca 480
aaccaaatgc aactacaata cagggactgg caacgagcga atccagatca agatgtgagt 540
aagaaagact ttcaaattggg aatgtttacat agtcgggcat ttgaatataa atcaattaaa 600
gatgaacaac aagagaaaga attttgggtc aacattgtgg caaccgtggt gattgtggga 660
gtcagtattt tctgcccacc cgccggcctt gccttagccg taggatacgg gattttagaa 720
gctggttcgg caatcagtggt gaaggactgg gtatctggcc gtgaactaag tacagaagaa 780
cgagcgcttc gtggcggttt agcactgcta gatatcgttc caggtgtgaa agcattgagc 840
acaggagcga aagctgccag tgccggctcg aaacttgtcc gcgtaggcga taatgtttta 900
gcaggtagca agaacgtcgg caaagggaacc atcgacaatg gcattcaagc aggaaaacaa 960
gcatggtatc tccggttagc caatgcgaaa aaagtcagcg aagctgtcca aaagaaactc 1020
accaaagacc ttgacgatat cggcacgatg gccaaaacca tccaaaacaa aaccaagaa 1080
accttcacac ttccaccgag agagcaactc gcctttgcga gaggaggcag tattccgaa 1140
caaagcgcca ccggagccgc cgcatagcc gcgaagaaaa agctgaaaga tattatgcag 1200
aacatggata atttgaatgt gaaggcgccg gggaaagatg atataattga acaaaataaa 1260
agccttaagt ttacttcatt agaggaatcc gagaaatggg gaattgatgg tttttcagta 1320
tgagaaaact ctttatcttc tctgaaatc caagctatta gggactatac agacatttgg 1380
cattatggaa atatgaatgg ttatttaaga ggaagtgtcg aaaaacttgc cccagataat 1440
gcagaaagaa ttaagaatct aagcagtgtc ttggaaaaag cagagttacc tgataatata 1500
attttatata gaggaactag ttctgaaata ttggataact ttcttgattt aaagaattta 1560
aattaccaa atttagttgg gaaaacaatt gaagaaaaag gatttatgag tacaactacc 1620
ataagtaatc aaacgttctc aggaaacgtt acaatgaaaa tcaacgctcc taaaggtagc 1680
aaaggtgcat atctagctca ttttagtgaa acacctgaag aagcagaggt attgtttaat 1740
atagggcaaa aaatgttaat aaaagaagtt acggaactta acggcaagat agaaattata 1800
gttgacttat tataa 1815

<210> 3
<211> 309
<212> PRT
<213> *Listeria innocua*

<400> 3
Met Lys Glu Val Asn Tyr Arg Glu Asp Asp Trp Arg Glu Ala Lys Ser
1 5 10 15

Ala Leu Ala Pro Phe Ala Ala Ala Asn Trp Val Gly Gly Leu Phe Asn
20 25 30

Asn Leu Glu Lys Val Ser Lys Asn Met Glu Glu Ala Glu Glu Asp Ile
 35 40 45
 Gln Glu Leu Asp Ser Asp Arg Ala Ile Ser Phe Gln His Thr Asn Tyr
 50 55 60
 Arg Gly Lys Tyr Ser Ala Ile Glu Asp Asp Leu Met Val Leu Tyr Lys
 65 70 75 80
 Phe Ser Cys His Ala Gly Glu Lys Met Glu Thr Leu Val Asp Gln Pro
 85 90 95
 Phe Tyr Glu Lys Leu Asp Ala Phe Val Asp Gly Met Gln Asp Leu Ser
 100 105 110
 Ile Ser Thr Tyr Ser Thr Thr Asn Arg Ile Gly Ala Lys Ser Lys Gln
 115 120 125
 Thr Tyr Met Ser Ser Tyr Gly Asn Gln Pro Gln Val Ile Glu Ser Val
 130 135 140
 Lys Asp Asn Ala Thr Ile Glu Asp Leu Leu Asn Gly Asp Asn Phe Tyr
 145 150 155 160
 Ala Asn Gln Met Gln Leu Gln Tyr Arg Asp Trp Gln Arg Ala Asn Pro
 165 170 175
 Asn Gln Asp Val Ser Lys Lys Asp Phe Gln Met Gly Met Leu His Ser
 180 185 190
 Arg Val Phe Glu Tyr Lys Ser Ile Lys Asp Glu Gln Gln Glu Lys Glu
 195 200 205
 Phe Trp Val Asn Ile Val Ala Thr Val Val Ile Val Gly Val Ser Ile
 210 215 220
 Phe Cys Pro Pro Ala Gly Leu Ala Leu Ala Val Gly Tyr Gly Ser Leu
 225 230 235 240
 Glu Ala Gly Ser Ala Ile Ser Gly Lys Asp Trp Val Ser Gly Arg Glu
 245 250 255
 Leu Ser Thr Glu Glu Arg Ala Leu Arg Gly Gly Leu Ala Leu Leu Asp
 260 265 270
 Ile Val Pro Gly Val Lys Ala Leu Ser Thr Gly Ala Lys Ala Ala Ser
 275 280 285
 Ala Gly Ser Lys Leu Val Arg Val Gly Asp Asn Ile Leu Val Gly Ser
 290 295 300

Lys Asn Val Gly Lys
 305

<210> 4
 <211> 11
 <212> PRT
 <213> Escherichia coli

<400> 4
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 1 5 10

<210> 5
 <211> 9
 <212> PRT
 <213> Escherichia coli

<400> 5
 Leu Tyr Asp His Ala Arg Gly Thr Gln
 1 5

<210> 6
 <211> 15
 <212> PRT
 <213> Escherichia coli

<400> 6
 Tyr Asp Asp Gly Tyr Val Ser Thr Ser Leu Ser Leu Arg Ser Ala
 1 5 10 15

<210> 7
 <211> 15
 <212> PRT
 <213> Escherichia coli

<400> 7
 Ser Pro His Pro Tyr Glu Gln Glu Val Ser Ala Leu Gly Gly Ile
 1 5 10 15

<210> 8
 <211> 11
 <212> PRT
 <213> Neisseria meningitidis

<400> 8
 Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp
 1 5 10

<210> 9
 <211> 9
 <212> PRT
 <213> Neisseria meningitidis

<400> 9
 Val Tyr Ala His Gln Ile Glu Thr Gly
 1 5

<210> 10
 <211> 15
 <212> PRT
 <213> Neisseria meningitidis

<400> 10
 Tyr Asp Gly Cys Tyr Ile Ser Thr Thr Thr Asp Lys Glu Ile Ala
 1 5 10 15

<210> 11
 <211> 15
 <212> PRT
 <213> Neisseria meningitidis

<400> 11
 Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp
 1 5 10 15

<210> 12
 <211> 52
 <212> PRT
 <213> Streptomyces coelicolor

<400> 12
 Thr Leu Tyr Arg Ser Asp Ser Arg Gly Pro Gln Val Val Phe Glu Glu
 1 5 10 15
 Gly Phe His Ala Lys Asp Val Gln Asn Gly Gln Tyr Asp Val Glu Lys
 20 25 30
 Tyr Val Leu Val Asn Gln Pro Ser Pro Tyr Val Ser Thr Ser Tyr Asp
 35 40 45
 His Asp Leu Tyr
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<210> 13
 <211> 15
 <212> PRT
 <213> Streptomyces coelicolor

<400> 13
 His Lys Trp Ala Asp Gln Val Glu Val Ala Phe Pro Gly Gly Ile
 1 5 10 15

<210> 14
 <211> 11
 <212> PRT
 <213> Mycoplasma pneumoniae

<400> 14
 Phe Val Tyr Arg Val Asp Leu Arg Ser Pro Glu
 1 5 10

<210> 15
 <211> 9
 <212> PRT
 <213> Mycoplasma pneumoniae

<400> 15
 Phe Phe Glu His Ile Leu Ser Thr Asn
 1 5

<210> 16
 <211> 15
 <212> PRT
 <213> Mycoplasma pneumoniae

<400> 16
 Gly Arg Ser Tyr Phe Ile Ser Thr Ser Glu Thr Pro Thr Ala Ala
 1 5 10 15

<210> 17
 <211> 15
 <212> PRT
 <213> Mycoplasma pneumoniae

<400> 17
 Thr Ser Phe Ala Tyr Gln Arg Glu Trp Phe Thr Asp Gly Pro Ile
 1 5 10 15

<210> 25
 <211> 15
 <212> PRT
 <213> Streptococcus pyogenes

<400> 25
 Thr Lys His Ser Phe Met Ser Thr Thr Ala Leu Lys Asn Gly Ala
 1 5 10 15

<210> 26
 <211> 15
 <212> PRT
 <213> Streptococcus pyogenes

<400> 26
 Ser Ala Val Pro Ser Glu Val Glu Leu Leu Phe Pro Arg Gly Cys
 1 5 10 15

<210> 27
 <211> 11
 <212> PRT
 <213> Listeria monocytogenes

<400> 27
 Ile Leu Tyr Arg Gly Thr Ser Ser Glu Ile Leu
 1 5 10

<210> 28
 <211> 15
 <212> PRT
 <213> Listeria monocytogenes

<400> 28
 Glu Glu Lys Gly Phe Met Ser Thr Thr Thr Ile Ser Asn Gln Thr
 1 5 10 15

<210> 29
 <211> 15
 <212> PRT
 <213> Listeria monocytogenes

<400> 29
 Ser Glu Thr Pro Glu Glu Ala Glu Val Leu Phe Asn Ile Gly Gln
 1 5 10 15

<210> 18
 <211> 11
 <212> PRT
 <213> Salmonella typhi

<400> 18
 Phe Val Tyr Arg Val Asp Ser Thr Pro Pro Asp
 1 5 10

<210> 19
 <211> 15
 <212> PRT
 <213> Salmonella typhi

<400> 19
 Ser Cys Ser Gly Gly Ser Ser Asp Ser Arg Tyr Ile Ala Thr Thr
 1 5 10 15

<210> 20
 <211> 15
 <212> PRT
 <213> Salmonella typhi

<400> 20
 Thr Met Met Arg Leu Gln Arg Glu Tyr Val Ser Thr Leu Ser Ile
 1 5 10 15

<210> 21
 <211> 11
 <212> PRT
 <213> Salmonella paratyphi

<400> 21
 Phe Val Tyr Arg Val Asp Ser Thr Pro Pro Asp
 1 5 10

<210> 22
 <211> 15
 <212> PRT
 <213> Salmonella paratyphi

<400> 22
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 1 5 10 15

<210> 23
 <211> 15
 <212> PRT
 <213> Salmonella paratyphi

<400> 23
 Thr Met Met Arg Leu Gln Arg Glu Tyr Val Ser Thr Leu Ser Ile
 1 5 10 15

<210> 24
 <211> 11
 <212> PRT
 <213> Streptococcus pyogenes

<400> 24
 Val Val Tyr Arg Tyr Val Tyr Glu Thr Phe Leu
 1 5 10